

**MEAP**

**MICHIGAN  
EDUCATIONAL  
ASSESSMENT  
PROGRAM**

**Grade 8  
Science**

***Released Items***

***Winter 2003***

- 4 Morris and Katie both drive trucks. Morris drives a 1-ton truck and Katie drives a 2-ton truck. Both vehicles have motors and tires that are the same size. Morris and Katie are at a stoplight and both step on the gas at the same time. Morris pulls away faster. Why does Morris' vehicle take off faster?
- A because Katie's truck is heavier
  - B because Morris's truck has more gas
  - C because Morris's tires cause greater friction
  - D because Katie used a different type of gas than Morris
- 5 Doreen was sitting on her bed doing her homework one afternoon. She noticed a small spot of light on her bedroom wall which moved with her arm. What could be causing this spot of light on the wall?
- A light from her watch refracting on the wall
  - B light from the window being absorbed by the wall
  - C light from the window being refracted by her watch band
  - D light from the window reflecting off the face of her watch
- 13 Katie has red hair, green eyes, and freckles, just like her mother. Her father has brown hair, brown eyes, and no freckles. Why does Katie look more like her mother than she does like her father?
- A because Katie's father is older than her mother
  - B because Katie's father doesn't have any freckles
  - C because Katie inherited more traits from her mother than her father
  - D because daughters always resemble their mothers more than their fathers

Use the following information to answer questions 24 through 27.

*Archaeopteryx* (ar-kay-op-ter-icks) is the name given to a creature that lived about 145 million years ago. This creature had feathered wings that enabled it to fly, but its skeleton resembled that of a small carnivorous dinosaur. It is believed to have been cold-blooded. This creature was first discovered in Germany in a layer of ground associated with the Jurassic period.



***Archaeopteryx Fossil***

- 24 Based on the information in the passage, how should Archaeopteryx be classified?
- A vertebrate and single-celled
  - B vertebrate and cold-blooded
  - C invertebrate and multi-cellular
  - D invertebrate and warm-blooded
- 25 Based on the information in the passage, what is **MOST LIKELY** true of Archaeopteryx's place in the ecosystem?
- A It was parasitic.
  - B It was a predator.
  - C It was a plant-eating dinosaur.
  - D It spent most of its time underwater.

- 26 Which of the following conclusions is **MOST** accurate based on the fossilized remains of Archaeopteryx?
- A Birds are not related to dinosaurs.
  - B All dinosaurs were capable of flight.
  - C Archaeopteryx existed only in Germany.
  - D Archaeopteryx is possibly the ancestor of modern birds.
- 27
- Identify one trait of Archaeopteryx that it shares with modern birds.
  - Identify one trait of Archaeopteryx that it does **NOT** share with modern birds.
  - Explain how one of these traits might have changed over millions of years.

**ANSWER THIS ITEM IN YOUR ANSWER FOLDER.**

**NOTHING WRITTEN IN THE SPACE BELOW WILL BE SCORED.**

## Item 27 Scoring Rubric

**Acceptable Response**

- A) Wings, feathers, carnivorous habits, flight
- B) Cold-bloodedness, slow metabolism, reptilian qualities, skeleton resembled dinosaur
- C) More archaeopteryxes would have gained bird-like aspects/traits (or these aspects/traits would have become more pronounced).  
OR  
More archaeopteryxes would have lost reptile-like aspects/traits (or these aspects/traits would have become less pronounced).  
OR  
Picks a trait that might have changed and explains how it changed.  
OR  
They adapted/evolved (through the years).

**Note:** It is not required that the student explains the traits listed in A or B to receive full credit for C.

**Scoring Guide:**

- 3 points = Student correctly addresses A, B, and C.
- 2 points = Student correctly addresses A & B, or B & C, or A & C.
- 1 point = Student correctly identifies A or B or C only.
- 0 points = Student fails to correctly respond to any part of the question.

3 points

27 Identify one trait of *Archaeopteryx* that it shares with modern birds.

I think this bird looks like a old bird. the bird look about 200 years old.

Identify one trait of *Archaeopteryx* that it does **NOT** share with modern birds.

Explain how one of these traits might have changed over millions of years.

**Score Point: 0**

This response does not adequately identify a similar trait, does not identify a different trait and does not explain changes over millions of years.

3 points

27 Identify one trait of *Archaeopteryx* that it shares with modern birds.

They bought fly.

Identify one trait of *Archaeopteryx* that it does **NOT** share with modern birds.

Archaeopteryx is bigger than a bird

Explain how one of these traits might have changed over millions of years.

They might of changed because they are smaller now then they were then.

**Score Point: 1**

This response adequately identifies a similar trait (fly).

3 points

27 Identify one trait of *Archaeopteryx* that it shares with modern birds.

① One trait that it has is feathered wings

Identify one trait of *Archaeopteryx* that it does NOT share with modern birds.

② it resembled a small dinosaur

Explain how one of these traits might have changed over millions of years.

③ he could at get bigger or lost its feathers

**Score Point: 2**

This response adequately identifies a similar trait (feathered wings), adequately identifies a different trait (resembled a small dinosaur), but does not adequately explain how a trait changed over millions of years.



3 points

27 Identify one trait of *Archaeopteryx* that it shares with modern birds.

• It has feathered wings.

Identify one trait of *Archaeopteryx* that it does NOT share with modern birds.

• It has a slow metabolism.

Explain how one of these traits might have changed over millions of years.

• Over millions of years there metabolism might have speed up because of all the flying they do.

**Score Point: 3**

This response adequately identifies a similar trait (feathered wings), adequately identifies a different trait (slow metabolism), and adequately explains how a trait changed over millions of years (there metabolism might have sped up).

Use the following information to answer questions 40 through 43.

Anna's science class has been studying the water cycle and its relationship to changes in the weather. They are learning about factors that affect weather patterns and how weather forecasts are made.



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- 40** After a storm there was a lot of water vapor in the air. It was a hot day and Anna noticed that her shirt felt a little damp. What caused this dampness?
- A** wind
  - B** clouds
  - C** pressure
  - D** humidity

- 41 While studying weather forecasting, Anna's teacher shows the class the following weather map.



**Which of the following is a correct interpretation of the map?**

- A** A cold front is heading toward Michigan.
- B** A warm front is heading toward Michigan.
- C** A cold front has just passed through Michigan.
- D** A warm front has just passed through Michigan.

- 42 While studying weather forecasting, Anna's teacher shows the class the following weather map.



On the local news, Anna notices that the weather forecast calls for high winds and heavy rainfall to be coming her way. Which of the following is **MOST LIKELY** to be the cause of this predicted weather?

- A A cold air mass is remaining stationary for an extended period of time.
- B A cold air mass is colliding with a moist, warm air mass.
- C A warm air mass is remaining stationary for an extended period of time.
- D A moist, warm air mass is colliding with a dry air mass of the same temperature.

- 43 A local weather station reported the following conditions in Lansing, Michigan:

<b>Barometric Pressure</b>	30.3 inches Hg
<b>Wind Direction</b>	from the southwest
<b>Wind Speed</b>	9 mph
<b>Temperature</b>	28°C
<b>Sky</b>	Clear
<b>Relative Humidity</b>	35%
<b>Precipitation</b>	none

- Describe the weather for this day using the information from the table.

**ANSWER THIS ITEM IN YOUR ANSWER FOLDER.**

**NOTHING WRITTEN IN THE SPACE BELOW WILL BE SCORED.**

**Item 43 Scoring Rubric****Acceptable Response**

The student correctly describes the day. (i.e. Warm and dry with a slight breeze. It is sunny with no chance of rain. This type of weather is most likely to occur in the summer.)

OR

The student correctly restates information from the chart to describe the day.

Or

The student may describe the day using a combination of these two methods.

**Note:** Acceptable phrases include: dry, sunny/clear, hot, slight breeze, high pressure, no precipitation.

**Scoring Guide:**

3 Points = Student provides an acceptable description of the weather. (3 aspects)

2 Points = Student provides a partial description of the weather. (2 aspects)

1 Point = Student provides a minimal description only. (1 aspect)

0 Points = Student provides no acceptable description.

3 points

43 Describe the weather for this day using the information from the table.

It will be a cold, windy  
day in the Southwest

**Score Point: 0**

This response provides no description of the weather.

3 points

43 Describe the weather for this day using the information from the table.

The weather forecast for today is wind is headed south. The temperature is 24°. The sky color is kind of dark. Precipitation, none at the moment.

**Score Point: 1**

This response provides a minimal description of the weather (Precipitation, none at the moment).



3 points

43 Describe the weather for this day using the information from the table.

There is no rain or precipitation.  
The wind speed is 9 mph and coming from  
the southwest. It is 35% humid and 30.3 inch  
hg. So it means that it is a rain-free day,  
windy and humid

**Score Point: 2**

This response provides two acceptable description of the weather (no rain, coming from the southwest). 35% humidity and humid are a contradiction, wind speed is 9mph and windy are a contradiction, no credit can be given for 35% humidity or wind speed is 9mph. 30.3 inches of Hg is not adequate.

3 points

43 Describe the weather for this day using the information from the table.

Today it is going to be hot (28°C), skies are  
clear with a 0% chance of rainfall. There are  
winds from the southwest traveling at 9 mph.

**Score Point: 3**

This response provides three acceptable description of the weather (hot '28 C'; skies are clear; winds from the southwest).